ABSTRACT

The present invention relates to methodologies for the self-assembly of nanoparticles onto a release support that is capable of covalent integration into flexible free-standing films. Such films display useful constitutive properties, such as permittivity, permeability, electrical conductivity, thermal conductivity, and nonlinear optic properties. The type of property is dependant upon the type of nanoparticle incorporated into the compliant polymeric matrix. The compliant matrix may be any material that reacts with the components in the nanoparticle film and may be separated from the release substrate. The nanoparticles may be dispersed uniformly or spatially patterned throughout the self-assembled film.

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